STD32
User Manual

Revision 1.2

Important information

This technical description contains important information for start up and use of the STD32. Read it carefully before you start working with the STD32.

The warranty will be void should damage occur due to non-compliance with these instructions for use. We cannot accept any responsibility for consequential loss.

We cannot be held responsible for material loss or personal injury that is due to incompetent use or non-compliance with the safety instructions. The warranty will be void in such circumstances.

The STD35 contains highly integrated components which can be damaged by electrostatic discharge if the user would open the housing.

CEP preserves the right to change the included information without notice and doesn't take responsibility for errors in the document and/or missing information.

	Therefore only touch the STD32 on the housing or connectors and avoid touching the components on the board.

Safety Instructions

	When using products which are exposed to electric voltage the valid VDE-regulations have to be observed. Especially VDE 0100, VDE 0550/0551, VDE 0700, VDE 0711 and VDE 0860 are applicable.

- All wiring work has to be done in a voltage free state only
- All cables and wires which are energized and connected to the device, the module, or components have to be checked regularly for any damage to the isolation shielding or fractures in the cables. If the supply cables are visibly damaged the device has to be taken out of operation immediately until the faulty cable has been exchanged
- Before putting a device into operation, it has to be clarified, whether this device or module is appropriate for the field of application. In case of doubt ask a specialists or the manufacturer of the device.
- Please note that we are not responsible for any errors in usage or connection. Therefore we cannot accept any responsibility for consequential loss.
- Before opening the device always disconnect the mains adapter or make sure that the device is disconnected from the power supply.
- Components, modules or devices have to be built into a housing before they are put into operation. During installation they should not be connected to any power supply .
- You should only use tools on components, modules, or devices if they are disconnected from the power supply, and residual electric charge (which may still be stored in some components inside the device) has been discharged.

- When using components or modules it is necessary to strictly observe the specification given in the corresponding description of these components.
- If a description for a private end-customer does not clearly state which electric data is valid for a component or a module, how to wire the device, which external components, or additional devices can be connected or which parameters these components are allowed to have, a specialist must be contacted.
- Devices which operate with greater than 35 Volts have to be connected by a specialist.
- Before putting the device into operation it should be checked that there is no current leakage on the housing.
- In case that measurements with the opened housing are necessary, an isolating-transformer has to be integrated for safety reasons. Alternatively the voltage can be supplied by an appropriate power supply which complies with the safety regulations. All wiring work has to be done in a voltage free state only.

Table of Contents

Important information 2
Safety Instructions 2
1 Introduction 5
2 Background Information 6
2.1 GSM-Network in general 6
2.2 GPRS 6
2.3 Quadband Frequencies 6
2.4 E-Mail via SMTP 6
3 Operating Conditions 7
4 Proper Use 7
5 Introduction 8
6 Quick start up 10
6.1 General preparations 10
6.2 Hardware preparations 10
6.3 Configuration Call 11
6.4 Quick configuration check 11
7 Basic SMS Commands 12
7.1 Table of Basic Commands 12
7.2 Send SMS Commands 13
7.3 Explanation of the commands 13
7.4 Examples for SMS Commands 15
8 E-Mail functionality via GPRS 16
8.1 Configuration of the E-Mail functionality 16
8.2 Additional E-Mail configuration possibilities 18
9 Complete list of commands 21
10 Connecting the camera 25
11 Configuration Tool 27
12 Troubleshooting 28
13 Accessories 29
14 Technical data 30
15 Document history 31

1 Introduction

Thank you very much for purchasing our CEP STD32 telemetry device!

The STD32 offers the user the possibility to remotely switch ON or OFF electronic devices and to receive alarm messages via (SMS). You can switch devices either with an SMS or using a simple voice call. Alarm messages (SMS) can be received with any mobile phone supporting SMS functionality.

With the new generation of the STD32 you now also have the possibility to receive alarm messages via e-mail.

With the help of the digital camera which is available as an accessory, pictures can be taken and sent via e-mail triggered by an alarm.

We wish you success and joy in using your new STD32!

Concerning the user manual

This document is meant to help you use the various functions of the device in the most optimal way. Therefore we ask you to please read this manual carefully.

If you are in a hurry and want to make yourself familiar with the details of the product later, then please read chapter 6 "Quick Start-up" first.

There you will find all necessary information to put the device into operation.

The information in this document has been gathered after thorough inspection but they are not be taken as assurance of end product properties.

The written approval of CEP AG is mandatory before you can pass on or reproduce this documentation for this product or the software or use the content.

CEP reserves the right to change the data mentioned here without prior notice and does not take any responsibility for technical inaccuracies and/or omissions. This manual has been thoroughly checked; should you nevertheless find an error or want to express criticism or make suggestions, please send an e-mail to

E-Mail: support@cepag.de

Oberhaching, 21st Feb 2014

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2 Background Information

2.1 GSM-Network in general

The GSM Network (Global System for Mobile Communications) is a standard for all-digital mobile phone networks. GSM has been created to provide a mobile telephone system offering the users Europe wide mobility and voice services compatible with ISDN or analog services.

Originally GSM has been designed for voice calls, the transmission of text messages (SMS) and the transmission of data with a constant data speed. With the success of the internet an evolution of GSM started. The GSM network was expanded to offer packet oriented data transmission (e.g. via GPRS) while keeping all other features and being fully downwards compatible.

2.2 GPRS

GPRS (General Packet Radio Service) is a packet oriented transmission service which is used in the mobile networks and which is supported by almost all network providers.

With GPRS you only have a virtually existing permanent connection to the other party. Only when you really transmit data will the channel will be used, otherwise it is free for other users. This means that no channel will be reserved permanently for a user (as it is with a GSM voice call). Therefore the GPRS-bills depend more on the actual data volume transmitted than on the connect time.

If the device is booked into the GPRS-Net it will automatically be assigned an IP-Address and can exchange data with any server accessible via the internet,

Before you can use the GPRS-Interface the SIM-Card must be activated for GPRS. To order this functionality please talk to your mobile network provider.

2.3 Quadband Frequencies

When a device is "quadband" it means that it uses the four major GSM frequencies and that it is compatible with most GSM networks worldwide.

These four frequencies are 850 MHz and 1900 MHz (on the American continent) and 900 MHz and 1800 MHz, which are used in almost all other countries worldwide (Europe and Asia).

In contrast to a triband mobile phone which only supports 900/1800 and 1900 or 850/1800 and 1900 a quadband device can be used in almost every GSM network worldwide.

2.4 E-Mail via SMTP

SMTP (Simple Mail Transfer Protocol) is a method used to send e-mails over the internet. The STD32 establishes a connection to an SMTP server which will send the e-mail to the given e-mail address. The STD comes preconfigured with an E-Mail service subscribed by CEP. Please note, however, that CEP does not maintain own infrastructure for the E-Mail service. Changes in external services may take place at any time and are beyond our control. For more information see chapter 8.

3 Operating Conditions

- Operate the STD32 only with a supply voltage between 7-32V DC and have in mind the polarity! (see picture1) Use a stabilized power supply with minimum 1A output current. (we recommend to use only the original CEP power supply). If you use a mains adapter for power supply it has to conform with the VDE regulations.
- Devices with an operating voltage greater than 35 Volts which are connected to the relay have to be installed by a specialist observing the VDE regulations.
- Loads connected to the device are not allowed to exceed 1000 W per relay.
- The maximum voltage of the outputs is 250 VAC (alternating current)
- The maximum switching power per relay is 6 A (depending on the width of the PCB tracks)
- When installing the device make sure that the supply cable has a sufficient diameter
- During operation the temperature has to be between -20° and 55° Celsius.
- Protect the device from humidity, spray water and heat.
- In case of condensation allow a period of about 2 hours for acclimatization.
- Do not operate the device in areas where inflammable gas, vapors, or dust are or could be present.
- Do not expose the device to heavy vibrations.
- The unit may only be repaired by a specialist.
- Only original parts have to be used when repairing the unit. The use of differing spare parts can cause serious material loss or personal injury.
- No special operation position of the device has to be observed.

4 Proper Use

The device is designed for the remote switching of devices via the GSM network as well as the remote retrieval of status information of the inputs and the generation of SMS messages or e-mails after status has changed at the inputs. A different utilization of the device other than the one described above is not allowed.

5 Introduction

The STD32 is a telemetry module which is easy to install and simple to use.
With the STD32 you can control two relays and monitor the status of two digital inputs with one or several common mobile phones.

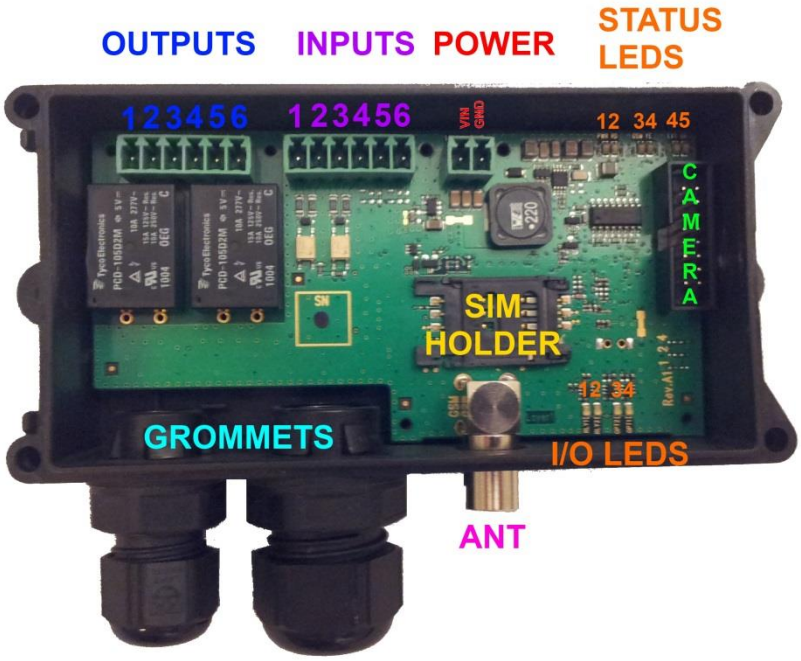
Apart from the STD32 you only need a valid SIM Card of any network provider (GSM850 / 900 / 1800 or 1900 MHz)

While using prepaid SIM-cards one shall always keep aware of the amount of remaining credit left on the card, so that in case of alarms a message can be sent.

Typical fields of application are

- the opening of (garage) doors
- switching on and off light and alarm devices as well as generating alarm messages (SMS or e-mail)
- the retrieval of information from door sensors, movement sensors or level sensors

You can for example open your garage door with a call or get a message (via SMS or e-mail) in case your house alarm system gets triggered. In connection with the CEP camera you can get a photo via e-mail



As shown in Figure 1 the STD 32 has 3 sets of connector terminals.

Pins 2 and 3 of the output connector are used to connect a device to the relay of output 1. Pins 5 and 6 are the connections for the relay of output 2. Pins 1 and 4 are reserved and should not be used.

On the input connector pins 2 and 4 are connected to the positive sides of the optocouplers for inputs 1 and 2 respectively. Pins 1 and 3 are the negative sides of the same optocouplers. When voltage is present across the optocouplers the inputs will be activated. Pins 5 and 6 are reserved.

Power to the device is supplied VIN input and the GND input of the power connector.

The ANT connector is where the GSM antenna with FME-female should be attached.

LED Signals:

The Status and I/O LEDs are labelled on the PCB.

When the engine is booked into the GSM network the GSM LED flashes once every 2 seconds.

The status LEDs show the status of the inputs and outputs. RLY1 and RLY2 are on if the corresponding relay is activated. OPT1 and OPT2 signal the status of the optocoupler inputs IN1 and IN2.

The EXT LED is on as long as the camera is active.

The RD and GR system LEDs show the current system status and are described later on.

Please observe the maximum output voltage of the relays and the maximum input voltage of the inputs! In chapter 3. "Operating Conditions" you will find further information on this.

6 Quick start up

In the following section it is described step by step what you have to do to administrate the STD32 without long preparation.

6.1 General preparations

You need an activated SIM card of a GSM network provider. The PIN of this card has to be deactivated or set to "0000"(4 times zero).

Alternatively you could use the PIN "2468".

To change or deactivate the PIN you can use a common mobile phone. The instructions how to change or deactivate the PIN are described in the manual of your mobile phone.

If you use a SIM card with a PIN different from "0000" or "2468" in the STD32, the STD32 will use a "wrong" PIN. After the second attempt to power up the device your SIM card will be blocked. In this case you need to use the "PUK" to assign a new PIN to your card. Please look into the user guide of your mobile phone. There you find how to use the PUK to de-block the SIM card.

Should you wish to use a SIM card which does not require a PIN, this is also possible and the STD32 recognizes this and will behave accordingly.

In the following we will refer to the "master mobile" as the mobile telephone which you want to use to switch the outputs **and** to configure the STD32 via calls.

To be able to administer the STD32 with your master mobile it is necessary that the "incognito" or "private call" function of the mobile is deactivated. This means the master mobile **has to** transmit the mobile telephone number with every call. To change the settings please refer to the user guide of your mobile telephone.

To test the setting you can call a different mobile phone; there your phone number or name should be displayed.

6.2 Hardware preparations

Before connecting the supply voltage to the STD32 please insert the SIM card into the SIM card holder: To open the SIM card holder move it sideways and flip it open; insert the card (mind the proper orientation of the card) and close it again. To lock it in place move the top sideways in the opposite direction.

Now please connect the GSM antenna which is part of the delivery to the proper antenna connector on the STD32 board.

After that connect the power supply

Please always observe the polarity (see picture 1) and that you have a proper power supply. (see chapter 3."Operating Conditions")

6.3 Configuration Call

After having connected the power supply the green system LED will be illuminated for approx. 5 seconds (system start). Shortly after that the GSM LED will be activated. Now the STD32 will automatically try to connect to the GSM network. As soon as this is done, the GSM LED will be flashing once every 2 seconds.

As soon as the red and green system LED are toggling the STD32 is ready and waiting for the configuration.

Now call with master mobile the phone number of the SIM card which is inside the STD32. The STD32 will accept the call and cancel it a few seconds later. During this call, a four digit DTMF sequence is sent to the caller and you will hear them on your mobile phone.
With this call the STD32 is configured to the master mobile.

Pay attention:

As long as the STD32 still has the factory defaults it shows this by the toggling the red and green system LEDs. From this moment on you have three minutes to configure the STD32 with the configuration call.

After 3 minutes (without configuration call done in between) the device switches off. If you switch it on again afterwards the STD32 is again expecting the configuration.

In case the STD32 will be disconnected from the power supply after a successful configuration by a power failure it will automatically send a SMS/E-mail with the text "START-UP ALARM" to the preconfigured telephone number as soon as the power supply is established again.

6.4 Quick configuration check

To check whether the configuration was successful you can now make the following quick configuration check.

Take your master mobile and call the telephone number of the SIM-Card inside the STD32. This call should be cancelled by the STD32 and the Relay 1 should switch for one second (watch LED L1 to see the status of the relay).

Now the basic configuration is done which means that all future events will be sent to the master mobile and that Relay 1 can be switched from that mobile phone.

To use the additional functions of the STD32 please continue reading chapter 7 "Basic SMS Commands"

7 Basic SMS Commands

7.1 Table of Basic Commands

Factory settings	R
Status of I/Os	ST?
Start-up alarm SMS on/off	S:1. / S:0.
Relay 1 on	O1ON.
Relay 1 off	O1OFF.
Relay 2 on	O2ON.
Relay 2 off	O2OFF.
Switching time Relay 1	O1:xxxxx. (seconds)
Switching time Relay 2	O2:xxxxx. (seconds)
Delay before reply (Relay 1) 0 = no message	A1:xxx. (seconds)
Delay before reply (Relay 2) 0 = no message	A2:xxx. (seconds)
Time of activation Input 1	I1:xxx. (seconds)
Time of activation Input 2	I2:xxx. (seconds)
Invert Input 1	V1:x. (x= 1/0)
Invert Input 2	V2:x. (x= 1/0)
2nd alarm number	C2:<number>.
3rd alarm number	C3:<number>.
4th alarm number	C4:<number>.
5th alarm number	C5:<number>.
new password	PN:xxxx.
event text 1	E1:<text>.
event text 2	E2:<text>.
Start-up alarm Text	PT:<text>.
add clip to the extended clip list	CL:<nummer>.
remove clip from the extended clip list	CD:<nummer>.

7.2 Send SMS Commands

By sending a SMS to the STD32 you can switch the outputs or make individual configuration settings.

Those SMS have the following format which is described below:

In order to avoid unauthorized usage, every configuration command to the STD32 must start with a 4-digit password. Control commands (for example: switching an output or status requests) do not require a password.

The factory set password is the last four digits of the IMEI number of your STD32. You find your devices IMEI printed on a sticker on the back of the housing.

The last four digits of the IMEI being the password for your device must always be kept a secret. In this example the keyword is "4244".
The IMEI cannot be changed! Although the password can be changed if needed for security purposes, you should keep in mind that every command – including setting back to factory settings – requires the knowledge of the password.

All commands (except R: and ST?) must end with a full stop "."!

All commands can be sent in one SMS; each command has to be separated from the next by a full stop (see examples).

Any command parameter that includes a full stop must be put in quotation marks (e.g. "user@example.email.com".).

The parameters for the seconds e.g. command "O1:xxxxx." can have 1-5 digits. Valid parameters are e.g. 1 (for 1 second), 90 (for 90 seconds) or 99999 for (99999 seconds). No leading "zeros" have to be added. Example: "O1:110" stands for 110 seconds.

Please observe the difference between the figure '0' and the letter 'O'!. ("O1ON." contains twice the letter O; "V1:0." contains once the figure 0)

A configuration command should look like the following example:

7.3 Explanation of the commands

Switching outputs via SMS

- After the STD32 has received a SMS with the text "O1ON." (Output 1 ON) from the configured mobile phone, the relay 1 switches for one second. With the SMS "O2ON." relay 2 switches for one second.
- To get feedback of the actual status of the inputs and outputs just send a SMS with "ST?"

Configuration-SMS (attention 4-digit keyword required!)

- The SMS "R:" is sets the STD32 back to the factory settings. Please note that this SMS can be sent from any mobile phone as long as the 4-digit keyword is known. This ensures that the STD32 can still be used even if the original master mobile (phone number) is no longer available.
- You can activate or deactivate the Start-up SMS (START-UP ALARM) with the SMS "S:x." (x = 1 or 0).
- A SMS with the text "O1:xxxxx." or "O2:xxxxx." (xxxxx = seconds) configures the switching time of the relays. The STD32 saves these settings so that they are still available after the supply voltage has been restored.
- If the switching time has been set to 0 by a configuration SMS the corresponding relay switches permanently at every call. If the relay has been active before it will afterwards be inactive and vice versa.
  In this case a SMS with the text "O1ON." from the configured mobile phone switches the relay 1 permanently on. A SMS with "O1OFF." permanently switches off relay 1. Relay 2 reacts accordingly to SMS messages with "O2ON." and "O2OFF.".
- The SMS "A1:xxx." or "A2:xxx." (x = seconds) sets the delay after which a reply SMS is sent after an output has been activated. This can be helpful if you want to switch something on or off and would like to measure the result of this output control with one of the inputs of the STD32. Therefore the new status after the switching of the output is transmitted.
- With a SMS containing the text "I1:xxx." or "I2:xxx." (xxx = seconds) you can configure the time the inputs have to be activated before the STD32 sends out an alarm SMS
- A SMS with the text "V1:x." or "V2:x." (x = 1 or 0) can change the polarity of the inputs. If x=1 an alarm SMS will be sent in case the input has not been activated for the configured time. The default value is x=0 which means that the STD32 will send an event alarm in case the input has been activated longer than the configured time

Please note that the brackets "<" and ">"in the following commands are not part of the commands but are included in order to increase the readability of the overview!

Four additional alarm numbers (mobile phones) can be defined using C2: - C5: commands. These numbers are allowed to set relay 1 by a call and they are informed via SMS in case of Start-up or events. These numbers are not allowed to send configuration SMS messages. **If an alarm number is given in international format, the number must start with '+'. (e.g. +491721234567)**

- With the "PN:<4digit password>." command the password can be changed. The password can include letters and figures but no special characters are allowed. All letters have to be in capital. The standard password (factory setting) is the last 4 digits of the IMEI (see chapter SMS Commands).
- The texts of the event or start-up SMS can be changed with the commands "E1:<text1>.", "E2:<text2>." and "PT:<startup text>.". The message length must not exceed 64 characters. **Do not use command syntax inside a message text. The '.' is the terminating character of the text. Each new text must be sent in a separate SMS.**
  If you have to use punctuation in the event text, use quotation marks at the beginning and at the end of the event text. For example:
  1234 E1:"Example Event 1.".
- You can generate an extended clip list of 1000 clip numbers. The numbers stored in the clip list are allowed to switch relay 1 with a phone call. Use "CL:" to generate the clip list and add further phone numbers. With "CD:" you can delete a phone number from the list. Be aware that you cannot read out the clip list (getting SMS messages) because it could by far

exceed the size limitation of SMS texts. If an asterisk "*" is added to the clip list, any incoming call will trigger relay 1.

- The ST? command reads out the current status of the device including all inputs and outputs. Most settings cannot be read back from the device remotely and without the configuration tool.

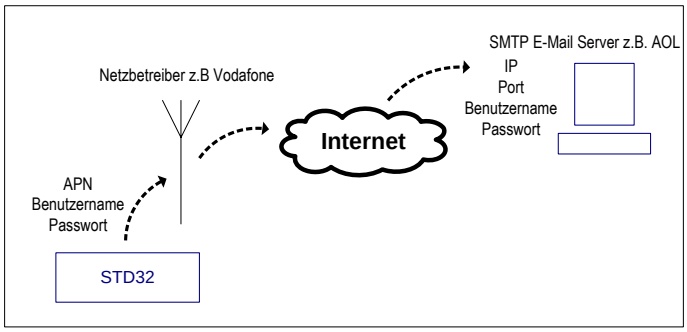
Please note that all commands listed in the section "Configuration SMS" require the 4-digit keyword at the beginning.

7.4 Examples for SMS Commands

Please note that for these examples the 4-digit password 4244 has been chosen. Instead of this password you have to use your 4-digit password of your STD32!

Start-up alarm off, relay 1 on, relay 2 off, time of activation of input 1: 5 sec	4244 S:0.O1ON.O2OFF.I1:5.
Switching time of relay 1 = 90 seconds	4244 O1:90.
Reset settings to factory settings	4244 R:
Configuration of the second alarm number	4244 C2:+491721234567.
Deleting a alarm number	4244 C2:.
Configuration of a new password	4244 PN:AB12.
Adding a new clip to the extended clip list	4244 CL:+491721234567.
Removing the clip from the extended clip list:	4244 CD:+491721234567.

8 E-Mail functionality via GPRS



The STD32 offers you the possibility to get messages via SMS and via e-mail.

8.1 Configuration of the E-Mail functionality

If you need a full stop "." in a parameter as it is for example in an e-mail address, the complete parameter has to be put into quotation marks ("...") (e.g. "h.muster@aol.com"), otherwise the "." would be seen as the end of the command.

Additionally you have to take care to send the 4-digit keyword at the beginning of each configuration SMS.
To be able to use the e-mail functionality the following parameters have to be set.

GPRS settings (to set up an internet connection)	
Name of the APN (Access Point Name)	APN:<text>.
User name for APN	APNUSR:<text>.
Password for APN	APNPWD:<text>.

- With the commands "APN:<text>.", "APNUSR:<text>." and "APNPWD:<text>." you make the basic settings to build up a GPRS (internet) connection. You need to get the necessary data from your GSM network provider

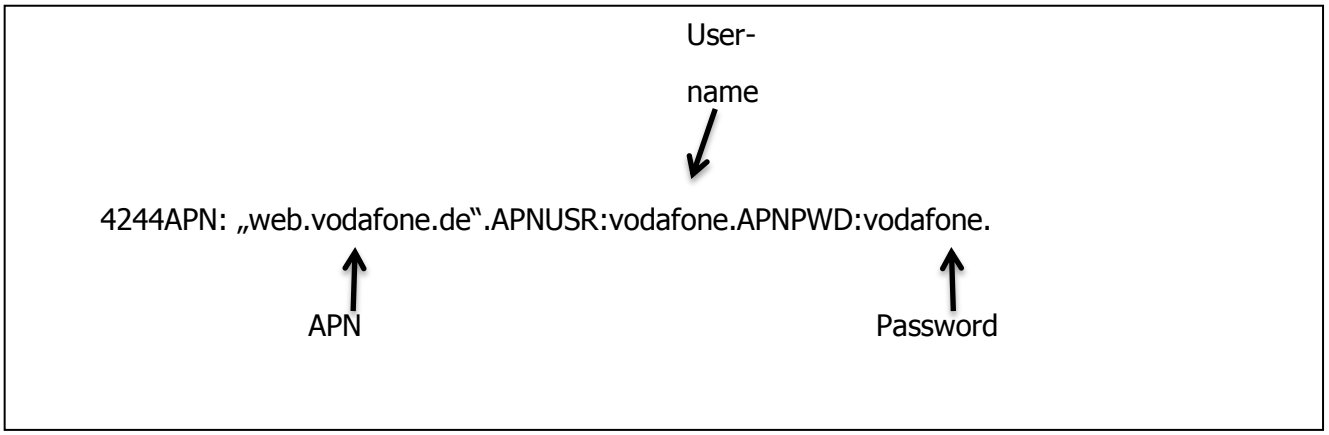
Example (Vodafone, Germany):
The GSM network provider Vodafone gives you the following details:

APN: web.vodafone.de

User: vodafone

Password: vodafone

Thus you would have to send the following SMS:



SMTP settings (to send e-mails)	
IP- Address of the SMTP Server	SMTPIP:<text>.
Port of the SMTP Server	SMTPPORT:xxxxx.
User name for SMTP Server	SMTPUSR:<text>.
User password for SMTP Server	SMTPPWD:<text>.

	In most cases it is not necessary to configure any of the SMTP settings as the device come preconfigured for the e-mail server subscribed by CEP, which is a free service for STD32 users. If the user wishes to use another server it must support plain text authentication. CEP does not maintain a list of mail providers the support plain text authentication, this information must come the provider of the mail server. As noted in Section 2.4 E-Mail via SMTP, CEP does not maintain own infrastructure for the E-Mail service. Changes in external services may take place at any time and are beyond our control.

Specific settings:

Recipient for e-mail transmission	
Recipient e-mail address	TO:<text>.

- With the command "TO:<text>." you define the recipient e-mail address. You can list up to 5 e-mail addresses each separated by a <;>. The max. length per e-mail address is 75 characters. Default status: no e-mail address is entered. If at least one e-mail address is defined an e-mail transmission is started at following events: start up, input1, input 2.

8.2 Additional E-Mail configuration possibilities

You can make further configuration settings for the e-mail functionality. With the following commands you can define e-mail recipients who should only get an e-mail in case of a certain event. For every event there can be a different email recipient.

Event 1 (Input1)	
Recipient e-mail address	TO1:<text>.
Subject line of the e-mail	SUB1:<text>.
Body of the e-mail	BODY1:<text>.

Event 2 (Input2)	
Recipient e-mail address	TO2:<text>.
Subject line of the e-mail	SUB2:<text>.
Body of the e-mail	BODY2:<text>.
Start Up Event	
Recipient e-mail address	TO3:<text>.
Subject line of the e-mail	SUB3:<text>.
Body of the e-mail	BODY3:<text>.
Incoming Call Event	
Recipient e-mail address	TO4:<text>.
Subject line of the e-mail	SUB4:<text>.
Body of the e-mail	BODY4:<text>.
Photo SMS Event	
Recipient e-mail address	TO5:<text>.
Subject line of the e-mail	SUB5:<text>.
Body of the e-mail	BODY5:<text>.

- With the command "TO**x**:<text>." **(x = 1 to 5 see above)** you define the recipient e-mail address **(only for this event)**. You can list up to 5 e-mail addresses each separated by a <;>. The max. length per e-mail address is 75 characters. Default status: no e-mail address is entered.
- With the command "SUB**x**:<text>." **(x = 1 to 5 see above)** the subject line of the e-mail is defined. The max. length is 128 characters per text. The default value is "STD32 x event"

- You can define the body text of the e-mail with the command "BODY**x**:<text>." **(x = 1 to 5 see above)**. The max. length is 160 characters per body text. The default value is empty, meaning no text is sent.

Additional settings

Senders e-mail address	**FROM:<text>.**
Priority of the e-mail	PRIO:<x>.
E-mail as HTML or Text	HTML:<x>.
E-mail code	CHARSET:text>.
Sender in subject line	FROMSUB:text>.
Send attachment	ATT:<x>.
E-mail address in CC	CC:<text>.
E-mail adress in BCC	BC:<text>.
Request picture via SMS	PHOTO.
Activate camera (on/off)	CAM:<x>.

- With the command "FROM:<text>." you can configure the sender e-mail address. The max. length is 75 characters.
- "PRIO:<x>." sets the priority with which the e-mail will be displayed. Possible values are from 1 to 5. The default value is 3 (normal priority).
- With the command "HTML:<x>." you can define whether the e-mail should be sent as a HTML message or as a text message (1 = HTML and 0 = text). The default value is 0.
- With the command "CHARSET:text>." you indicate with which coding the e-mail will be sent. The default value is "UTF-8". Normally you do not have to change this.
- If you want to enter the sender into the subject line you have to send the command "FROMSUB:text>.". The max. length is 75 characters. No senders e-mail address is entered here as default value.
- With the command "ATT:<x>." you can configure whether an attachment should be send or not (1 = send attachment, 0 = no attachment). The default value is 1 (send attachment).
- If you want to put a recipient on CC (Carbon Copy) you can do this with the command "CC:<text>.". The max. length is 75 characters. No e-mail addresses are entered as a default value.
- To put a recipient in BCC (Blind Carbon Copy) use the command "BC:<text>.". The max. length is 75 characters.. No BCC e-mail addresses are entered as a default value
- To make a picture and send it via e-mail send the SMS command "PHOTO.".
- You can deactivate the camera functionality when the camera is connected to the STD32 with the command "CAM:0." and activate it with "CAM:x.". The camera offers different resolutions and you can select the desired camera resolution (x):

1 = 80 x 60

3 =160 x 120

5 = 320 x 240

7 = 640 x 480

The default value is 0.

9 Complete list of commands

Configuration Commands	
R:	reset default device settings
ST?	request device status SMS
S:	1 - enable startup SMS
	0 - disable startup SMS
M1:	set phone number nr 1 (change master number)
C2:	set phone number nr 2
C3:	set phone number nr 3
C4:	set phone number nr 4
C5:	set phone number nr 5
PN:	set different password (max 4)
E1:	set message text for INPUT 1 event (max 64)
E2:	set message text for INPUT 2 event (max 64)
PT:	set message text for POWER-UP event (max 64)

Inputs & Outputs commands	
O1ON	turn relay 1 on
O1OFF	turn relay 1 off
O2ON	turn relay 2 on
O2OFF	turn relay 2 off
O1:xxxxx	defines time period for relay 1 action (in seconds)
O2:xxxxx	defines time period for relay 2 action (in seconds)
A1:xxxxx	Delay before reply (Relay 1) 0 = no message
A2:xxxxx	Delay before reply (Relay 2) 0 = no message
I1:xxx	debounce time for input 1 (in seconds)
I2:xxx	debounce time for input 2 (in seconds)
P1:xxx	Event counter for input 1 (after xxx Input Events, a Message is sent)
P2:xxx	Event counter for input 2 (after xxx Input Events, a Message is sent)
V1:x	1 - invert input 1

	0 - normal input 1
V2:x	1 - invert input 2
	0 - normal input 2

CLIP commands	
CL:	add clip list number, asterisk symbol (*) is also supported
CD:	remove clip list number

DATA commands	
EMAIL:	1 - enable email feature
	0 - disable email feature
	default is enabled
SMTPIP:XXXXX	defines SMTP server IPv4 address
	example SMTPIP:"smtp.aol.com"
	max length is 32
SMTPPORT:	defines SMTP server PORT
	example SMTPPORT:2121
	value must be a number, in range 0..
	default is 25
APN:	defines GPRS APN (for emails)
	example APN:internet
	max length is 32
	default is internet
APNUSR:	defines GPRS USERNAME (for emails)
	example APNUSR:Patryk
	max length is 32
	default is empty
APNPWD:	defines GPRS PASSWORD (for email)
	example APNPWD:Patryk
	max length is 32
	default is empty
SMTPUSR:	defines smtp username (used for authentication - this is

	not APN username!)
	example SMTPUSR:"p.szymczak"
	max length is 64 (according to RFC0821, chapter 4.5.3. SIZES)
	default is empty
SMTPPWD:	defines smtp password (used for authentication - this is not APN password!)
	example SMTPPWD:"p.szymczak"
	max length is 64 (according to RFC0821, chapter 4.5.3. SIZES)
	default is empty
FROM:	defines email sender
	example FROM:"p.szymczak@cetec.cc"
	max length is 25
	default is empty
TO:	defines up to 5 email recipients (separated by ";"), each one max 25 characters
	example TO:"support@cepag.de"
	max length of field is 129 [(5*25+1)-1]
	default is empty
TO1:	defines recipient address for INPUT 1 event
SUB1:	defines email subject that will be sent to "TO1" address
TO2:	defines recipient address for INPUT 2 event
SUB2:	defines email subject that will be sent to "TO2" address
TO3:	defines recipient address for STARTUP event
SUB3:	defines email subject that will be sent to "TO3" address
TO4:	defines recipient address for CALL event
SUB4:	defines email subject that will be sent to "TO4" address
TO5:	defines recipient address for PHOTO event
SUB5:	defines email subject that will be sent to "TO5" address
TO6:	defines recipient address for MOTION event
SUB6:	defines email subject that will be sent to "TO6" address
TO7:	defines additional recipient address for STATIONARY

	event
SUB7:	defines email subject that will be sent to "TO7" address
BODY:	defines general body content that can contain substitution variables

Camera commands	
CAM:	0 - disable camera feature
	1 - enable camera feature with photo size 80×64
	3 - enable camera feature with photo size 160×128
	5 - enable camera feature with photo size 320×240
	7 - enable camera feature with photo size 640×480
	default is 7 - enabled, with the biggest photo size
PHOTO	used without any parameters, triggers email with cam photo sending

DOTA commands	
DOTAAPN:internet.DOTAAPNUSR:"".DOTAAPNPWD:"".DOTAREQ.	
DOTAUSR:	set FTP username (max 16)
DOTAPWD:	set FTP password (max 16)
DOTASERVER:	set FTP server IPv4 or domain (max 64)
DOTAFILE:	set filename (max 64)
DOTAAPN:	set APN (max 24)
DOTAAPNUSR:	set APN username (max 12)
DOTAAPNPWD:	set APN password (max 12)
DOTAREQ	trigger DOTA

For Information about software update with DOTA (Download Over The Air) please contact our Support (support@cepag.de)

Misc commands	
VERSION?:	requests current software version

10 Connecting the camera

The STD35 is offers the possibility to monitor an object or a room with the help of the CEP camera optional accessory for the STD35

A picture can be sent as an attachment to the preconfigured e-mail address in the case of an alarm. This allows you to take further action if necessary (e.g. call the police if you see a burglar on the photo)

To be able to use this functionality you only have to connect the CEP camera to the camera plug on the STD35 (see picture 1) and to activate the email-feature and the camera.

After the software of the STD35 has recognized the camera the pictures can be sent via e-mail in the following ways:

- E-mail with JPEG attachment in alarm situation
- E-mail with JPEG attachment after incoming call
- E-mail with JPEG attachment after SMS request

In case the light intensity is not enough at the survey area the infrared light of the camera will be activated automatically. Please note that due to the infrared light there will be a loss of colors in the picture.

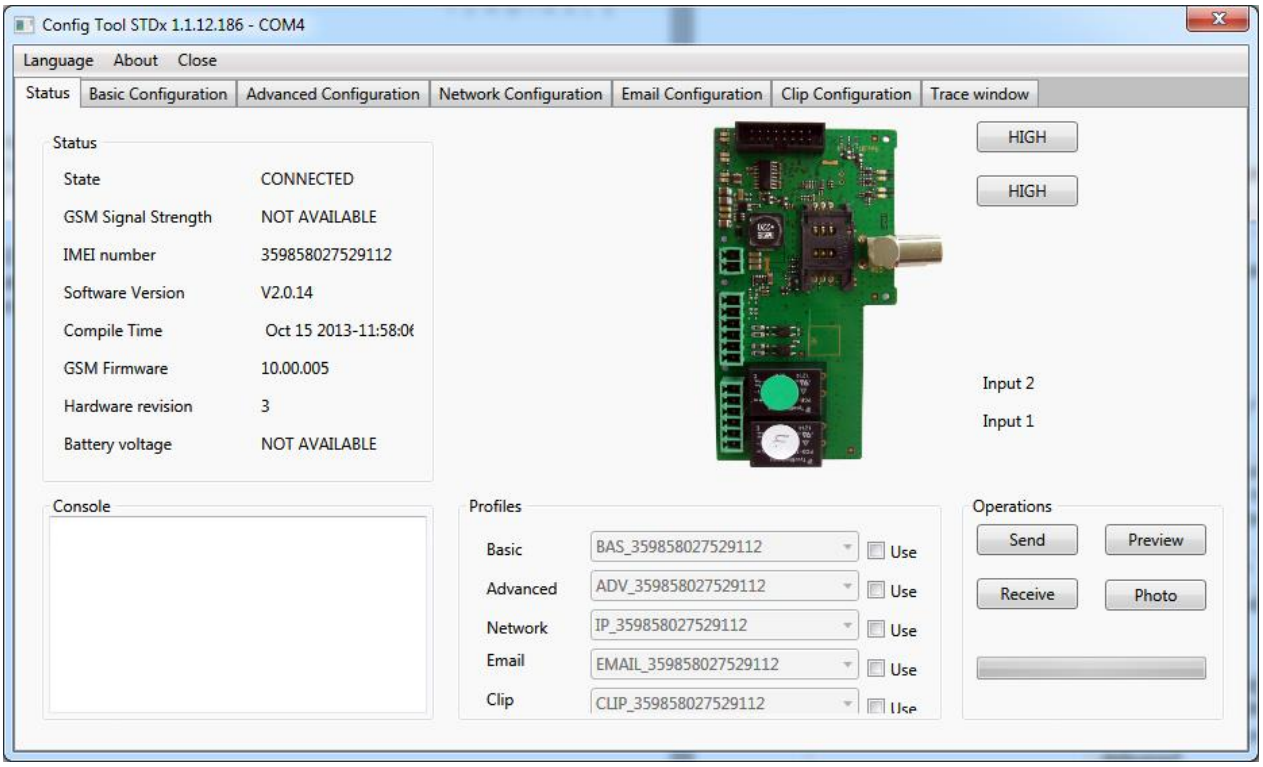
The CEP camera has an adjustable sun shade (metal plate over the camera). Please take into consideration when adjusting the sun shade that the insolation is changing during the day.

TIP: To make sure that all desired objects will be in the picture, that the sun shade is in a good position and/or that the illumination of the room will lead to satisfactory picture we recommend to take "test pictures" after the installation. Only then you can rely on the full functionality of the CEP camera.

11 Configuration Tool

Besides configuring The STD35 via SMS, or using a configuration call it is possible to use the CEP configuration tool to implement all setting. This tool allows the user to connect the device to a standard PC via a special STDx accessory cable.

Once the cable is connected the STD35 can be monitored and completely configured using the software provided. The configuration tool allows the user to configure devices without having to manually construct SMS commands or send any SMS to the device. You will get further information via info@cepag.de.



12 Troubleshooting

Problem	Possible Reason	Solution
GSM LED stays dark	No supply voltage-	Connect power supply
GSM LED blinks twice cyclically	No SIM card / Improper contact with SIM card	Insert SIM card properly or carefully clean contact area of SIM card
GSM LED blinks thrice cyclically	PIN is not "0000"	Change SIM card's PIN to "0000"
GSM LED constantly on	No GSM network available / no antenna connected	Connect antenna / Change antenna position
GSM LED dies after 3 minutes	No configuration	Make configuration call
STD32 does not react on configuration call (not accepting the call)	Device is already configured	Set back to factory settings
STD32 does not react to a configuration SMS	Wrong IMEI number in the SMS / SMS not yet delivered	Check IMEI number. / Wait until SMS is delivered
STD32 does not react to an SMS, or call, although booked to the network	The mobile phone does not transmit the phone number ("Incognito")	Activate the transmission of the phone number in your mobile phone
System LEDs toggle	No configuration call received by STD32	Make configuration call

13 Accessories

CEP AG is offering accessory parts for the STD32 which have been thoroughly tested to work with the STD32 and which have been approved for the use with the STD32. Therefore we strongly recommend to use only accessory parts of CEP AG. The warranty will be null and void if you use other than the original CEP accessory parts.

Please contact your supplier or CEP AG regarding the original accessory parts. The recommended accessory parts mainly consist of :

GSM – magnetic antenna **-Part-Number 12021** FME – female connector and 2,5m cable	
GSM – roof mount antenna **-Part – Number 12006** FME – female connector, 3m cable, waterproof	
Configuration Tool & Cable **-Part Number 16212** STD35 accessory connector	

14 Technical data

- GSM: Quad Band EGSM 850/900/1800/1900 MHz
  Compatible with ETSI GSM Phase 2 + Standard
- Output power:
  Class 4 (2W @ 850/900 MHz)
  Class 1 (1W @ 1800/1900 MHz)
- Temperature range: -20°C - +55°C
- Weight approx. 220 grams
- Dimensions: 150x65x45 mm (lxwxh)
- Supply voltage: 7-32V
- Idle current:15mA, peak up to 1.8A
- Max. output current: 6A
  Max. output voltage: 250V AC
- Input voltage (digital inputs)
  logic 1 (threshold >7V): max 32V
  logic 0 (threshold <1,5V) : min 0V

In case of technical problems or questions concerning the STD32,

please get in contact with your STD32 reseller.

For all other questions please call:

Sales: +49 (0) 89 / 4902686-0

15 Document history

Revision	Datum	Changes
Rev. 01	2nd March 2009	Completely new version
Rev. 02	23rd March 2009	Delta translations, camera resolution
Rev 1.0	21st March 2012	Updated for new STD32
Rev 1.1	11th December 2013	
Rev 1.2	21st February 2014	Updates to sections 2.4 & 8.

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